

Sub-Element 3.a— Implementation of Emergency Worker Exposure Control

What the Policy Says	<p>Intent NUREG-0654 provides that OROs should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimetry and permanent record dosimetry; the reading of direct-reading dosimetry by emergency workers at appropriate frequencies; maintaining a radiation dose record for each emergency worker; and establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.</p> <p>Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, b).</p> <p>Minimum Frequency Criterion 3.a.1 is to be evaluated every exercise.</p> <p>Extent of Play OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimeter chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the ORO's plans and procedures.</p> <p>Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.</p> <p>During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (for example, written procedures and/or co-workers) in providing responses.</p>
-----------------------------	--

	<p>Although it is desirable for all emergency workers to each have a direct-reading dosimeter (DRD), there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, for example, at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry.</p> <p>Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.</p> <p>All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.</p>
<p>Preparing to Evaluate This Criterion</p>	<p>Before the exercise, determine, according to the ORO's plan/procedures and the Extent of Play agreement:</p> <ul style="list-style-type: none"> • Who (identify by title and organization) makes the decision to dispatch emergency workers? • When (under what circumstances) will emergency workers be dispatched? • Are they prepared to <u>brief</u> emergency workers on the use of dosimetry, including: <ul style="list-style-type: none"> ➤ Zeroing direct-reading dosimeters, ➤ Checking the direct-reading dosimeters periodically during an emergency response, (e.g., every 15 to 30 minutes), ➤ Recording the readings of the direct-reading dosimeters on exposure record(s), ➤ Radiation exposure limits and turn-back values, ➤ Proper use of permanent record dosimeters, and ➤ Where and to whom to return their dosimetry at the conclusion of the emergency or mission? • What are the administrative reporting limits, and have they been pre-established at a level low enough to consider subsequent calculation of TEDE? • Who will determine whether to replace an emergency worker who has been exposed, and how is that determined? • What type of emergency worker exposure control is available for bus drivers, if required? • Who issues dosimetry to bus drivers, if bus drivers are required to have dosimetry? • Indicate which emergency workers will receive personal dosimetry, and which will have their exposure recorded by group dosimeters (such as those at reception centers, emergency operations centers, counting laboratories, etc.) worn either by a group leader or placed strategically in a facility?

During the Exercise	<p>During the exercise, in addition to evaluating activities related to the items listed above, be sure to:</p> <ul style="list-style-type: none">• If instructed, verify that the dosimetry kits being distributed to emergency workers are those specified in the plan.• Observe the Radiological Officer (or designated staff member) brief the emergency workers on exposure control equipment and methodology.• Note whether emergency workers undertaking life-saving missions or protecting valuable property or large populations were briefed on the increased risk from radiation.• Note whether emergency workers read their dosimetry on a regular basis as specified in the plan, and note the result on their exposure record cards, including those being monitored by a group dosimeter or dosimeters.• Note whether all emergency workers have been issued TLDs.• Interview at least two emergency workers.• Determine whether emergency workers know what the administrative reporting exposure limits are and what to do when the limits are reached.• Determine whether emergency workers know what the maximum exposure limits are, what activities would warrant receiving that kind of dose, and who would authorize such activities.
----------------------------	---